Format No: CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP 2018-12-11-54**
Customer	:	Assistant Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore. **Date: 11-08-2017**
Address	:	T. Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Providing retaining wall at Indira Kitchen in ward no. 14
Agency	:	Sri. Shrirama Reddy, no. 62, Behind of Widia, Ashok Nagar, Nagasandra, Bangalore - 73
Customer's Reference	:	ಕಾ.ಆ/ದಾ.ವಿ/ಕಾ.ಆ/ /2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	07-08-2017
Sample ID No	:	2018-12-11-54 /07
Sample Type/Size	:	Solid concrete blocks size (400X150X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex - C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	08-08-2017

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	402	152	203	12404	34.140	2752.3	2778.3	Not less than 1800Kg/m^3
2	401	151	201	12171	34.230	2812.5		
3	402	152	202	12343	34.190	2770.0		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	35.890	34.250	4.79	4.42	Shall not be more than 10% by mass
2	35.750	34.390	3.95		
3	35.830	34.280	4.52		

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Lab ID : **CP 2018-12-11-54**

Sample ID No : **2018-12-11-54 /07**

Date: 11-08-2017

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	401	151	203	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	403	153	201	
3	402	151	203	
4	401	153	201	
5	402	152	199	
6	403	151	202	
7	401	153	201	
8	403	151	203	
9	401	153	201	
10	402	151	203	
11	403	153	201	
12	401	151	200	
13	402	153	201	
14	401	159	203	
15	403	152	201	
16	401	151	203	
17	402	153	201	
18	403	151	203	
19	404	152	201	
20	403	153	201	
Average of 20	**402**	**152**	**202**	

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Lab ID : CP 2018-12-11-54

Sample ID No : 2018-12-11-54 /07

Date: 11-08-2017

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	401	151	60551	298.9	4.9	4.3
2	403	153	61659	256.8	4.2	
3	402	151	60702	232.9	3.8	
4	401	153	61353	286.4	4.7	
5	402	152	61104	274.6	4.5	
6	403	151	60853	265.3	4.4	
7	401	153	61353	259.5	4.2	
8	403	151	60853	242.7	4.0	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	Minimum average	Minimum Individual units.
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

Note:
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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TR/01

Date: 19/08/2017

Lab ID	:	CP 2018-12-11-54
Customer	:	Assistant Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T. Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Providing retaining wall at Indira Kitchen in ward no. 14
Agency	:	Sri. Shrirama Reddy, no. 62, Behind of Widia, Ashok Nagar, Nagasandra, Bangalore - 73
Customer's Reference	:	ಕಾ.ಆ/ದಾ.ವಿ/ಕಾ.ಆ/ /2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	14-08-2017
Sample ID No	:	2018-12-11-54 /01
Customer ID	:	M20 COCRETE
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	19/08/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	M20 COCRETE	M20	12/08/2017	19/08/2017	150.48 X 150.54 X 150.43	22653	8.312	394.2	17.4	17.3
2	M20 COCRETE	M20	12/08/2017	19/08/2017	150.45 X 150.56 X 150.51	22652	8.331	400.9	17.7	
3	M20 COCRETE	M20	12/08/2017	19/08/2017	150.52 X 150.48 X 150.35	22650	8.345	382.8	16.9	

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Authorized Signatory
Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

Lab ID : **CP 2018-12-11-54**

Date: 09/09/2017

Customer : Assistant Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

Address : T. Dasarahalli Sub Division, BBMP, Bangalore.

Project Name : Providing retaining wall at Indira Kitchen in ward no. 14

Agency : Sri. Shrirama Reddy, no. 62, Behind of Widia, Ashok Nagar, Nagasandra, Bangalore - 73

Customer's Reference : ಕಾ.ಅ/ದಾ.ವಿ/ಕಾ.ಅ/ /2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 14-08-2017

Sample ID No : 2018-12-11-54 /02

Customer ID : M20 COCRETE

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 09/09/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	M20 COCRETE	M20	12/08/2017	09/09/2017	150.54 X 150.45 X 150.46	22649	8.312	530.0	23.4	23.3
2	M20 COCRETE	M20	12/08/2017	09/09/2017	150.48 X 150.52 X 150.38	22650	8.331	516.4	22.8	
3	M20 COCRETE	M20	12/08/2017	09/09/2017	150.36 X 150.54 X 150.48	22635	8.345	538.7	23.8	

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP 2018-12-11-54 **Date: 05-08-2017**

Customer : Assistant Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

Address : T. Dasarahalli Sub Division, BBMP, Bangalore.

Project Name : Providing retaining wall at Indira Kitchen in ward no. 14

Agency : Sri. Shrirama Reddy, no. 62, Behind of Widia, Ashok Nagar, Nagasandra, Bangalore - 73

Customer's Reference : ಕಾ.ಆ/ದಾ.ವಿ/ಕಾ.ಆ/ /2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 03-08-2017

Sample ID No : 2018-12-11-54 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 03-08-2017

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing'	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	82	82	8.2	91.8	90-100	90-100	90-100	95-100
3	2.36 mm	133	215	21.5	78.5	60-95	75-100	85-100	95-100
4	1.18 mm	179	394	39.4	60.6	30-70	55-90	75-100	90-100
5	600 micron	186	580	58.0	42.0	15-34	35-59	60-79	80-100
6	300 micron	173	753	75.3	24.7	5-20	8-30	12-40	15-50
7	150 micron	156	909	90.9	9.1	0-10	0-10	0-10	0-15
8	Pan	91	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP 2018-12-11-54**

Sample ID No : 2018-12-11-54 /03

Date: 05-08-2017

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.23	-
2	Specific Gravity	2.53	-
3	Material finer than 75 micron(%)	8.2	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP 2018-12-11-54**
Customer	:	**Date: 05-08-2017** Assistant Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T. Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Providing retaining wall at Indira Kitchen in ward no. 14
Agency	:	Sri. Shrirama Reddy, no. 62, Behind of Widia, Ashok Nagar, Nagasandra, Bangalore - 73
Customer Reference	:	ಕಾ.ಅ/ದಾ.ವಿ/ಕಾ.ಆ/ /2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-08-2017
Sample ID No	:	2018-12-11-54 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-08-2017

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	223	223	4.5	95.5	90-100
3	10 mm	2421	2644	52.9	47.1	25-55
4	4.75 mm	2131	4775	95.5	4.5	0-10
5	Pan	225	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP 2018-12-11-54** **Date: 05-08-2017**

Sample ID No : 2018-12-11-54 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.6	
3	Specific Gravity	2.66	–
4	Bulk Density(Loose) (Kg/l)	1.52	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.28	–
7	Aggregate crushing Value(%)	25.4	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Quality Manager

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